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the ameba begins its flow again. In the meantime the rotifer is gradually weakened by the digestion of the foot. It may require days to engulf the rotifer.

In the capture of paramecia the amebæ take a sort of mushroom shape. The free margin is made irregular by numerous short pseudopodia. This furnishes a space beneath the umbrella and recesses at the margin in which paramecia tend to come to rest. Pseudopodia enclose the paramecia from either side. In some instances pseudopodia reached only about half the length of the paramecium and by turning toward the body of the prey compressed it so as to cut the animal in two,—engulfing only the inner half. This whole process required only about ten seconds. This was not an isolated incident, but was observed many times.

The writers, by computation based on the amount of pressure required to cut paramecia with a thin glass thread, have reached the conclusion that this amputation of paramecia by Ameba could not be explained by surface tension in the protoplasm of Ameba.

CASE OF BROODING IN HOLOTHURIANS

Ohshima (Ann. Zool. Japon., June, 1916) reports a new case of internal brooding in holothurians,—*Pseudocucumis africanus.* As many as 25 and 27 young were found in the body cavity of the mother. Three such brood-carrying individuals were found. The author was unable to discover either how fertilization occurs or the young escape.

EFFECTS OF ACTIVITY ON NERVE CELLS

Kocher (J. Comp. Neur., June, 1916) after fifteen separate experiments, completely controlled, on six different species of animals, using cells from various regions of the nervous system, reaches the conclusion that there is no deviation from the normal, either qualitative or quantitative, that can be revealed by the most exacting cytological tests in nerve cells even in the most advanced fatigue. He ascribes the varying results of former investigators to:—(1) difficulty in separating the effects of normal activity from unavoidable shock or injury to the nervous system in killing the animal; (2) post mortem changes taking place before complete fixation; (3)

varying chemical action of fixing agents; (4) solvent action of materials used in fixation and imbedding; (5) varying effects of chemical reaction between basic or acid stains and the different cell structures; and (6) effect of subjecting tissues to the temperatures necessary in manipulation. The author used an elaborate series of checks in control of the studies.

TRYPANSOME INFECTION IN MAMMALS

Lanfranchi (Atti. R. Ac. Linc. 1916, pp. 369-73) believes that *Trypanosoma brucei, T. gambiense* and *T. vodiense* can pass from the blood of a pregnant mother into the milk; and that by the first two, at least, the fœtus may also be infected in the same way.

IMPROVING TECHNIC FOR SHOWING DETAILS OF DIVIDING CELLS

Allen (Anat. Rec., July, 1916), as the result of a series of critical experiments to perfect the technic for demonstrating the details of mitosis in the central nervous system and in the testis of the albino rat, without producing distortion of adjacent tissues, offers the following suggestions:—

"For cytological work, the slightest gain at any point in the technic is worth working for.

"Very gradual changes of fluids, agitation of fluids during changing, and slow infiltration appear essential in order to get the best results from any fixative.

"The addition of a low percentage of urea to fixing fluids results in sharpening the chromosomes and preserving the structure of the achromatic nuclear material. It may help the penetration of the fluids.

"Picro-formol-acetic mixtures are more effective when used at about 38° C. Cold is detrimental.

"Flemming's fluid is more effective if used at 0° C. or a few degrees lower.

"Flemming's fluid is of no value as a brain fixative at any temperature. At times (if urea is added) it isolates metaphase and anaphase chromosomes in spermatocytes somewhat better than any